# ORGANIC FARMING DEVELOPMENT IN INDONESIA: LESSONS LEARNED FROM ORGANIC FARMING IN WEST JAVA AND NORTH SUMATRA

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# ORGANIC FARMING DEVELOPMENT IN INDONESIA:
## LESSONS LEARNED FROM ORGANIC FARMING IN WEST JAVA AND NORTH SUMATRA

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**Abstract** – By increasing rice production significantly, green revolution has been the most remarkable technology in Asian countries. However, it also has negative impact on human health and the environment such as pesticide residues and land degradation. Entering the 21st century, people's awareness regarding the environment and nature has increased and a "back to nature" lifestyle has emerged. Therefore, organic farming, that does not use chemo-synthetic inputs, has become one of the alternatives, and through maintaining harmony with nature, it can be the means to achieve sustainable agriculture.
The objectives of this paper are as follows: (1) to investigate the appropriate approaches for the development and extension of organic farming, (2) to give an overview of the process of organic farming development in case of West Java and North Sumatra, and (3) to investigate the importance of joint marketing of organic produce.
A survey was conducted in August 2007 in North Sumatra and from May to June 2008 in West Java. Based on the study, the environmentally friendly organic farming can contribute to higher farmers' income. It must be noted that farmers can easily convert to organic farming as it is profitable to do so. However, it is not only the matter of production, but also the matter of marketing or selling the organic produce. Hence, the joint marketing practice that has been implemented by farmer groups in West Java and North Sumatra can be one of the ways to ensure the viable marketing of organic produce.

**Key words**: organic farming, organic vegetables, organic rice, joint marketing, farmer group

## INTRODUCTION

Indonesia was one of the largest importing countries of rice in the 1960s. Adopting the Green Revolution that was introduced in the 1960s through the package of technology had helped the country achieve rice self-sufficiency in 1984. The rice production and productivity had increased sharply from 3.7 million tons and 2.5 tons/ha, respectively, in 1968 to 8.2 million tons and 4.4 tons/ha, respectively, in 1984. However, the Green Revolution with High Yielding Varieties and chemo-synthetic inputs such as fertilizers and pesticides as its main components, also has negative impact on human health and the environment such as pesticide residues and land degradation.

Entering the 21st century, there emerged the "back to nature" lifestyle where people became more aware of the negative impact of chemo-synthetic inputs. Thus, organic farming became one of the alternatives to the new lifestyle. The consumer preference to organic products had increased its demand and consequently, organic farming continued to develop in the country.

This paper aims to explain organic farming development in Indonesia. Particularly, its specific objectives are: (1) to investigate the appropriate approaches for the development and extension of organic farming, (2) to give an overview of the process of organic farming development in case of West Java and North Sumatra, and (3) to investigate the importance of joint marketing of organic produce. To accomplish these objectives, primary data was collected through field visit in August 2007 to a non-governmental organization (NGO), PANSU (under the project conducted by CRS (Catholic Relief Service) Indonesia) that works on organic rice farming in North Sumatra was done. In West Java, a questionnaire survey was also conducted on organic vegetable farmer group in Sukagalih Village, Megamendung on May-June 2008. Secondary data were collected from available literature.

## 1. OVERVIEW OF ORGANIC FARMING DEVELOPMENT

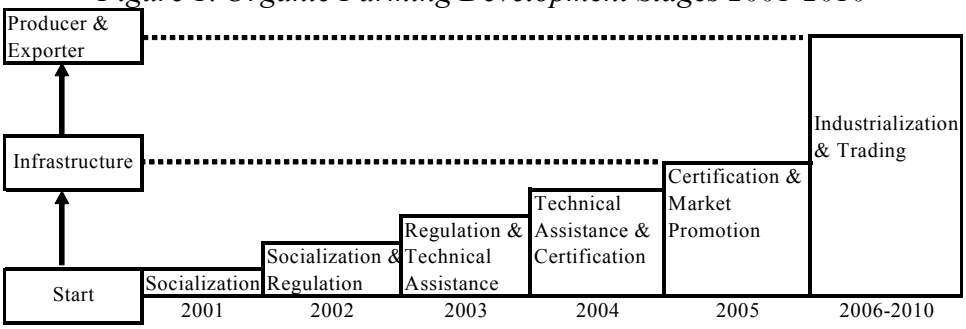
### 1.1. Development of Organic Farming in Indonesia

The organic farming movement in Indonesia started in 1984 through the establishment of Bina Sarana Bakti (BSB) Foundation as the center for organic agriculture development by Rev. Agatho Elsener. It is the first organic farming training center in Indonesia that has trained more than 10,000 farmers and organizations all over the country. From 1985 to 1990 Integrated Pest Management (IPM) program was largely conducted, especially in rice farming. This program had decreased the use of pesticide up to 90%. In 1990, the first network of farmer and fishery group, SPTN-HPS, was founded in Jogjakarta. Afterwards, the first Indonesian Organic Agriculture Network (JAKERPO) was established in 1998 by Biotani-PAN Indonesia, SPTN-HPS, Konphalindo, PPLH Seloliman and Gita Pertiwi during Organic Agriculture Workshop supported by International Federation for Organic Agriculture Movements (IFOAM). The network focuses on technical support for farmers and local marketing. In 1999, the first local direct selling of organic products, especially rice, was introduced by SAHANI cooperative in Jogjakarta.

Indonesian Organic Community (MAPORINA), a group consisting mostly of Ministry of Agriculture officers and those from the academe, was established in 2000. As of 2007, it has 14 branches, and focuses on research, consultation and development of organic farm models. In 2001, through active lobbying by MAPORINA, the "Go Organic 2010" program was initiated by the Ministry of Agriculture (Figure 1). However, it was not successful due to the lack of support from the Minister of Agriculture. In 2002, Indonesian Organic Alliance (IOA) was founded. It consisted of 45 organization members all over the country. BIOcert, the first national certification body, was developed by IOA. In 2003, Indonesian Organic Producer Association (APOI) was established by organic farmers to improve the quality and

quantity of agricultural produce while conserving the environment. In the same year, the Ministry of Agriculture established Organic Food Competent Authority (OKPO) (Fujimoto, 2008; Surono, 2007).

*Figure 1. Organic Farming Development Stages 2001-2010*




Source: 4 Tahun Go Organic 2010- Ditjen BPPHP, Deptan (2001)

As of 2006, Australia had the largest area allotted to organic farming with an area of 12,126,633 ha (1,832 farms), followed by China having 3,466,572 ha (1,520 farms), and Argentina with 2,800,000 ha (1,824 farms). Indonesia ranked 43rd among the countries with only 52,882 ha (45,000 farms) allocated to organic farming. To attain the 8.5 million ha target, the country needs to work harder to reach this goal. In 2007 the Ministry of Agriculture officially allocated a budget around USD 4 million for the development of organic agriculture (Surono, 2007). The country also targets to export 100 thousand tons of organic rice. However, it has so far only been able to export a tenth of that goal (10 thousand tons). (Antara, 2009).

At present, there are 5 popular organic producers and farms all over Indonesia. However according to the directory of organic farming published by the Ministry of Agriculture, there are about 49 firms and farms producing organic products such as rice, fruits, vegetables, tea, herbs, medicinal plants, and dairy products, and 41 firms producing organic fertilizers and pesticides.

## 1.2. Regulatory Authority and Certification Body

The roles of standardization and certification bodies are to improve quality management system of organic produce, increase market demand, support initiation of internal control system especially in small farmer groups, and increase products' image on the market. Along with the development of organic farming, several organic regulatory authorities were also established. First, the National Standardization Body/National Accreditation Committee (BSN/KAN) established National Standard for Organic Food (SNI 01-6729-2002) based on FAO/WHO Codex and IFOAM in November 2002. Second, the Center for Agriculture Standardization and Accreditation (PSA) formed Organic Task Force (OTF) on September 2003 that aims to develop and assist PSA in organic legislation. It consisted of stakeholders from government, academe, certification bodies, traders, NGOs and grower associations. Third, the National Agency of Drug and Food Control of Indonesia (NA-DFC) had drafted regulations for organic processed food. Lastly, the Ministry of Fisheries and Marine (MFM) had drafted regulations for organic aquaculture and marine products (Fujimoto, 2008).

In terms of organic certification, there are seven local certification bodies that have been accredited (Table 1). Certification bodies are very important in order to ensure that production in accordance with the standard organic farming procedures, thus, protecting the consumers from deception.

Table 1. Accredited Organic Certification Bodies in Indonesia

| No | Certification Body | Products |
|---|---|---|
| 1 | *Lembaga Sertifikasi Organik*/LSO (Organic Certification Body) Sucofindo, certificate no OKPO-LS-001, Jakarta | fresh products including staple food crops, horticultural products, and livestock products such as milk, egg, meat, and honey |
| 2 | LSO MAL, certificate no OKPO-LS-002, Depok, West Java | fresh product including food crops, horticultural products, and livestock products such as milk, egg, meat, and honey; and feed |
| 3 | LSO INOFICE, certificate no OKPO-LS-003,Bogor, West Java | fresh crops and livestock products |
| 4 | LSO Sumatra Barat, certificate no OKPO-LS-004, Bogor, West Java | fresh products of food crops and horticultural products |
| 5 | LSO LeSOS, certificate no OKPO-LS-005, Mojokerto | fresh food crops products |
| 6 | LSO BIOCert, certificate no OKP-LS-006, Bogor, West Java | crops products such as food crops, horticultural products, spices, marketing and restaurant, livestock and fishery products, and special products such as mushrooms |
| 7 | LSO PERSADA, certificate no OKPO-LS-007, Yogyakarta | fresh and processed products of crops such as food crops, horticultural products, and livestock |

## 1.3. Approaches, Sustainability and Extension of Organic Farming

### 1.3.1. Approaches

Organic agriculture has spread all over the world. The three approaches to the development of organic agriculture are as follows: (1) a development approach for subsistence/self-reliant communities, (2) an income generating approach, and (3) a nature conservation approach.

First, the subsistence/self-reliant communities approach proposes the development of organic farming based on self-production and consumption of the communities that will make the communities self-reliant or independent. Through this approach, the communities know and are assured where and how the agricultural products are produced since they are produced and consumed in their own communities. In Japan, this approach has been widely practiced through the *teikei* contract between the producers and consumers. For example, Ashigara Nounokai in Kanagawa prefecture that aims for independent society implemented organic farming to achieve a locally sustainable society.

Second, the income generating approach emphasizes the development of organic farming based on its profitability with its premium price and niche market. Although the philosophy of organic farming is living in harmony with nature by avoiding the use of chemo-synthetic inputs, the consumers of organic produce are from the middle and high classes who are willing to pay a relatively higher price. Thus, high profitability of organic farming has encouraged some entrepreneurs and farmers to convert to organic farming. Some companies who applied for organic certification export their organic products to the developed countries. It also has been observed that small-holder farmers increase their income after the conversion period (Jimenez, 2006).

Third, the nature conservation approach puts emphasis on the importance of organic farming in conserving nature, including the living creatures and their environments. Some organizations, mostly NGOs, with strong idealism about nature conservation had convinced the farmers to practice organic farming, and consumers to consume organic products. The connection of local NGOs with foreign ones implied that the development of organic farming through this last approach have already spread worldwide.

### 1.3.2. Sustainability

The practice of conventional agriculture had threatened the sustainability of the Earth and human health. The intensive use of chemo-synthetic inputs had degraded agro-ecosystems and human health. For example, chemo-synthetic pesticides had killed not only pests but also other organisms in the agro-ecosystem; high pesticide residues have been reported to have poisoned people in some areas; and the intensive use of chemo-synthetic fertilizers had degraded the land and polluted the water. The fundamental differences between conventional and organic agriculture is presented in Table 2. It is clear that organic agriculture can be the means to achieve sustainable agriculture.

Table 2. Fundamental Differences between Conventional and Organic Agriculture

| Conventional Agriculture | Organic Agriculture |
|---|---|
| Centralization | Decentralization |
| Dependence | Independence |
| Competition | Community |
| Domination of nature | Harmony with nature |
| Specialization | Diversity |
| Exploitation | Restraint |

*Source: Niggli, 2007*

The sustainability of organic farming can be seen from three aspects: economic; social; and environmental. First, in terms of economic aspect, organic farming by avoiding the use of external chemo-synthetic inputs will reduce production costs. Considering the premium price of organic produce, farmers will achieve higher profitability. Based on several experiments, although the yield will decrease in the early adoption, yield will increase later and then become constant. Thus, organic farming is considered economically viable.

Second, the social aspect can be seen from the social interactions, cultural, political and human development. The community development in organic farming communities can be seen when they build trust among themselves, their neighbors and the public through their very existence. Farmers who practice organic farming respect nature and their culture, develop their human capacities through sharing knowledge and information, and speak out in their communities and local governments (Sumner, 2005). Thus, in terms of social aspect, sustainability of organic farming can be achieved through good community building.

Third, in terms of environmental aspect, organic farming directly ensures environmental sustainability. The environmental benefits of organic agriculture has been widely documented, including the provision of ecosystem services, preservation of biodiversity, lower resource use, environmental protection, landscape values and reduced energy use (Jimenez, 2006). It has also been proven through several experiments that organic farming improves the soil fertility through improvement of biomass of cereal and potato organic farms. Functional richness and diversity (Shannon Index) calculated on the basis of substrate utilization patterns, revealed highest values for organic treatments and lower values for conventional treatments. A trial in Switzerland also showed that microbial properties of organic soils differ quite fundamentally from conventional and integrated ones in the long run (Niggli, 2007).

### 1.3.3. Extension

The full support of the Government became the key to the success of Green Revolution. In Indonesia, for instance, besides the package of technology, the Government also established

institutions, such as farmer groups and cooperative village units, and extended financial support such as credit. In terms of technical assistance, extension officers were provided to help the farmers in adopting the technology.

The organic farming movement was a protest to the Green Revolution, that despite increasing food production, it had negative impact on the environment and human health. NGOs have played important role in organic farming extension. Based on community building, these NGOs convinced the farmers to convert to organic farming, gave them technical assistance on cultivation techniques, and developed market network. They also helped increase consumers' awareness of human health and the environment thus creating a market for organic produce. One important point in organic farming extension by NGOs is that the NGOs supervised farmers in production and marketing so the farmers can market their produce and earn profit.

In Indonesia, NGOs have played an important role in organic farming development. Although the NGOs put emphasis on increasing the awareness of the importance of nature conservation, the main reason why farmers convert to organic farming is the economic reason, that engaging in it will increase their income.

## 2. ORGANIC FARMING IN WEST JAVA AND NORTH SUMATRA

### 2.1. Organic Farming Experiments under AFRP-IPB in West Java

Academic Frontier Research Project of Tokyo University of Agriculture and five universities, i.e. Bogor Agricultural University, Udayana University, Hanoi Agricultural University, National Agrarian University La Molina and Kasetsart University, had conducted a collaborative research project entitled "Development of New Bio-Agents for Alternative Farming Systems." The project was divided into two phases: Phase I from 1999 to 2003; and Phase II from 2004 to 2009 (Fujimoto, 2008). The alternative farming system team of IPB had focused on the development of technology in the first phase, and spread the technology of organic farming in the second phase (AFRP-IPB, 2008). The second phase consisted of several stages: technology adoption, expansion of farmers and land, development of market, development of supporting institutions, and ultimately the sustainable organic farming system.

There were two experiment sites: Situgede and Sukagalih villages in Bogor district, West Java. In Situgede village, organic rice farming experiment was conducted for seven planting seasons at a rice field of 7,200 $m^2$. In Sukagalih village, organic vegetable farming experiment was conducted for 6 planting seasons at 1,500 $m^2$ upland field. The results showed that organic rice and vegetable farming cultivation techniques are location-specific. Due to the premium price, the organic farmers were able to earn higher income than the conventional farmers. In order to spread the technology, farmer groups had been established in the two villages.

#### 2.1.1. Establishment of Farmer Groups

In order to spread the organic farming technology, Saluyu Organic Vegetable Farmer Group was established in October 2007. Conventional vegetable farmers who lived and cultivated their lands adjacent to the experiment site were convinced to convert to organic vegetable farming and together formed the farmer group. Since it was a new institution, there were several conflicts and problems that occurred in the body. In April 2008, the farmer group's name was changed to "Putra Alam Organic Vegetable Farmer Group" with the new group leader Mr. Amran. Mr. Amran is an energetic middle-aged farmer and had experience working at an organic farm and trading. The farmer group consisted of the leader, the secretary, the treasurer and the supervisors. The supervisors function as internal control

system or participatory guarantee system. They were elected by the members to ensure that the produce was organic and that no chemo-synthetic fertilizers and pesticides were applied. The supervisors sometimes check on the members' cultivation practices.

According to the interview conducted in May 2008, only 9 out of the 11 member farmers were active. Besides vegetable cultivation, the group also raised sheep and made bokashi. Farmers usually gathered once a month at a bamboo hut in order to exchange and share information regarding organic farm management and also make the production plan in order to meet the demand. However, since the farmers live nearby and interact almost everyday, they were able to discuss their problems and share information whenever they meet. In addition, the AFRP-IPB members usually came once a week on Saturday and during that time the farmers consulted about technical and marketing problems. The farmer group could hopefully continue to develop not only in number but also in land area, cultivation technique and marketing practice.

### 2.1.2. Cropping Pattern

Before converting to organic farming, monocropping of vegetables was the common practice as it is easier to manage. Farmers planted carrot, tomato, corn, sweet potato, *caisin* (Brassica juncea) and *hakusai* (Chinese cabbage). However, they sometimes changed the type of vegetables in rotation.

Farmers practiced mixed cropping in organic farming. As can be seen in Table 3, most farmers (4 farmers) used to plant carrot but after converting to organic farming, they planted various vegetables such as broccoli, lettuce, spinach, tomato, carrot, *kangkung* (water spinach), *caisin*, eggplant, and *kaylan*. The other four farmers who used to plant *caisin*, corn, sweet potato, and tomato as monocrops changed their cropping patterns to mixed cropping of baby corn, chili, French bean, tomato, *caisin*, spinach, lettuce, carrot, corn, sweet potato, *pakchoy*, cabbage, cucumber, *kangkung* and *kaylan*. One farmer who used to plant carrot and *hakusai* still practiced the same pattern.

Table 3. Changes of Cropping Pattern

| Monocropping | Mixed cropping | No. of farmers |
|---|---|---|
| Carrot | broccoli, lettuce, spinach, tomato, carrot, kangkung, caisin, eggplant, kaylan | 4 |
| Caisin | Baby corn, chili, French bean, tomato, caisin, spinach, lettuce | 1 |
| Corn | Carrot, corn, French bean, sweet potato, Pakchoy, caisin | 1 |
| Sweet potato | Cabbage, tomato, cucumber, baby corn, caisin, carrot | 1 |
| Tomato | Broccoli, lettuce, spinach, tomato, kangkung, kaylan | 1 |
| Carrot, hakusai | Carrot, hakusai | 1 |

Source: Survey May-June 2008

There were two major reasons why farmers changed cropping pattern from monocropping into mixed cropping. First, farmers needed to meet the market demand for various kinds of vegetables. Because this demand could not be met by monocropping as it only produces one kind of vegetable, farmers diversified their farms by mixed cropping. Second, vegetables were susceptible to pest and disease attacks. Diversification through mixed cropping reduces the risk of harvest failure by pest and disease attacks. If harvest failed because one vegetable was attacked, farmers could still earn income from other vegetables.

## 2.2. Organic Farming in North Sumatra

An NGO (PANSU) in North Sumatra that was established on September 8, 1994 with certificate No. 25 by Notary public had introduced an environmentally friendly alternative

farming system. Its vision was to solve farmers' and agricultural problems with agro-ecosystem approach. Its missions were: (1) to develop agriculture as the sustainable livelihood in order to combat oppression, (2) to assist farmers to develop an independent, democratic and sovereign local organization, (3) to pioneer and develop fair marketing, and (4) to serve farmers in the area (Evaluation Team, 2008).

Starting from the field school of integrated pest management (IPM) in 2003, the NGO was able to raise the awareness of farmers. Farmers who used relatively high amounts of pesticides began practicing IPM. Afterwards, the NGO introduced organic farming under the project funded by an international NGO (CRS Indonesia) in 2004. DAS Ular located in Deli Serdang and Serdang Bedagai Districts was selected as the target area because it is one of the rice bowls of North Sumatra Province, covering 25,364.6 ha irrigated rice fields in 213 villages and 9 kecamatan (sub-districts). The upstream of DAS Ular supplies water to all rice fields along Ular river, the downstream is a beach where the mangrove forest is endangered.

To increase production, rice farmers in DAS Ular had depended heavily on external inputs such as chemical pesticides and fertilizers. This practice had significantly contributed to environmental degradation (agro-ecosystem) along Ular River. The NGO viewed modern agriculture using high external inputs as a modern form of colonization as it had made the farmers lose their independence by heavily depending on inputs produced by big multinational companies. In addition to environmental consideration, the NGO introduced organic farming to help farmers become less dependent on these external inputs. The high premium price of organic rice will also increase farmers' income in DAS Ular agro-ecosystem, especially through joint marketing.

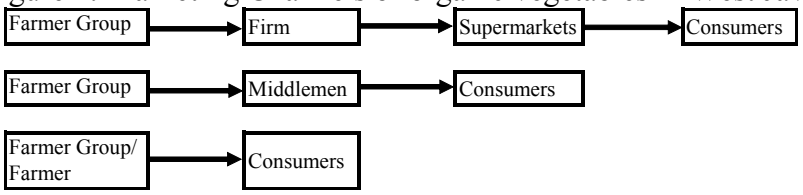
During the field survey, there were 149 farmers in 10 farmer groups with a total 51 ha of rice fields. These farmers had practiced rice organic farming under the supervision of the NGO in ten villages in DAS Ular area. The NGO trained two cadres from each farmer group to learn the organic standard and management of the group. Internal Control System (ICS) that consisted of 20 people as the representatives of farmer groups and NGO's field officers was established to control organic farming practice by conducting internal inspection and determining the status of the members.

## 3. MARKETING PRACTICE: JOINT MARKETING

### 3.1. Marketing Practice in West Java

In terms of marketing practices, there were three major practices as shown in Figure 2. The first one is: from farmer's group to firm to supermarket and to the consumers. The AFRP-IPB developed this marketing channel by facilitating an agreement between the farmer group and an organic firm regarding the price, kinds and amount of vegetables. The firm comes to the farmers' field twice a week to pick up the vegetables and pays the farmers once a week. Because the firm requires several kinds and amounts of vegetables, the farmers under the coordination of farmer group device the production plan to meet this demand. The largest proportion of vegetable marketing is done through this practice. The second one is: from farmer group to the middlemen and then to consumers. The middlemen consisted of other organic farms and also AFRP-IPB members. There were several organic farms in the area that sold directly to consumers. Sometimes, when these organic farms could not meet the demand, they bought from the farmer group. The AFRP-IPB members also assisted farmers by selling vegetables to the IPB neighborhood. The third one is farmer/farmer group to consumers. Some consumers went directly to the farmers' field to buy vegetables.

Figure 2. Marketing Channels of organic vegetables in West Java



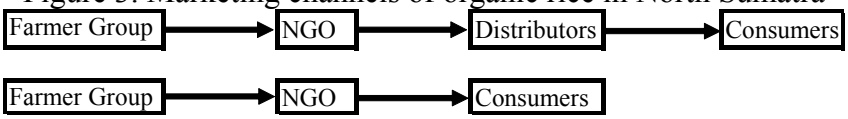

According to the agreement between the farmer group and the firm, farmers received premium fixed price higher than those of conventional vegetables. Organic vegetable farmers earned an average gross income of Rp 760,000 per month, ranging from Rp 400,000 to Rp 1,600,000. This average is more than twice the income of conventional vegetable farmers who earn an average gross income of Rp 295,000 per month.

The reasons of most farmers to convert to organic farming can be grouped into (1) health and environment, (2) economic: lower production cost and higher profit and selling price, (3) peer influence and (4) marketing of produce. Among these, the economic reason plays the most important role in the adoption of organic farming. From the producers' viewpoint, organic farming, more than anything else, should be economically viable as they also support their families. According to Jimenez (2006), organic farming is an effective risk management tool for small poor farmers as it reduces input costs, diversifies production, and improves local food security.

### 3.2. Marketing Practice in North Sumatra

Marketing practice of organic rice in North Sumatra can be explained as follows. First, farmers dry and store their paddy at their house. Then, the NGO and farmer group's staff identify and record the available dried paddy at each member's house. When orders come, the NGO then asks the farmers to mill the dried paddy in according to the orders. As for the marketing channels, as seen in Figure 3, there are two common marketing channels: (1) from farmer group to NGO to distributors then finally to consumers, and (2) from farmers group to NGO and to consumers. There were about 11 distributors in the area.

Figure 3. Marketing channels of organic rice in North Sumatra




During the survey, the demand for organic rice was 5 to 4.5 tons per month. The conventional rice was sold at Rp 3,000/kg while the organic rice was sold at Rp 5,000/kg. However, with the packaging materials provided by the NGO, organic rice was sold at Rp 7,000/kg to Rp 8,500/kg. This marketing margin of at least Rp 2,000/kg was shared among the NGO (70%), the farmers (25%), and the farmer group (5%).

Farmers earned an income of Rp 5,842,508 per season from their rice fields in 2007. By selling organic rice, they earned 25% higher income compared to selling unhusked rice. Farmers had an annual income of Rp 11,023,600 with an expenditure of Rp 10,938,000.

Joint marketing have been introduced through the farmer groups. Farmers sold their agricultural produce together through farmer groups that have agreement with buyers. The principles of the joint marketing are: (1) direct selling to final consumers, avoiding dealing with middlemen, (2) shortening the marketing channels, and (3) selling the products collectively, especially in the same territory (territorial approach). Farmers received higher prices because of direct selling and shortened marketing channels. The selling price of the products is the same as the on-going price in the market as the group regularly conducts

market surveys preventing farmers from receiving prices lower than the market price (Evaluation Team, 2008).

## CONCLUSION

The Green Revolution had increased food production significantly, but on the other hand, it had negative impact on human health and the environment. In order to minimize this, organic farming became an alternative solution. Experiments and research have proven that organic farming besides being environmental friendly is also economically viable. Unlike the Green Revolution which received full support from the Governments, organic farming movement has been initiated by the NGOs concerned about nature conservation. Through community building, mostly through the establishment of farmer groups, the NGOs have played an important role in organic farming extension.

AFRP-IPB that developed organic farming technology in the first stage established an organic vegetable farmer group in order to spread the technology and increase adoption rate. Based on the study of the farmer group in West Java, farmers who converted to organic vegetable farming shifted from monocropping to mixed cropping for two reasons: (1) to meet the market demand and (2) to minimize the risk of harvest failure caused by pests and diseases.

In North Sumatra, an NGO that started with an IPM field school had raised farmers' awareness of environment and health. When the NGO introduced organic farming, they also helped farmers become less dependent on external inputs, and increase their income.

The two case studies reflect that first, farmers have earned higher and stable income due to the premium fixed price by signing a contract with an organic firm through joint marketing. Second, income generation approach is the most appropriate approach to attract farmers to convert to organic farming. Third, the practice of joint marketing through farmer group should be adopted in order to receive premium price and market.

In short, promotion of organic farming through farmer group should be accompanied by marketing channel. Through the farmer group, farmers have a venue to share information and technology. Farmers have stronger purchasing power as a group and joint marketing is a viable alternative to market their produce.

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## REFERENCES

AFRP-IPB Team. 2008. "Development of Rice and Vegetable Organic Farming Systems in Bogor, West Java, Indonesia", Academic Frontier Research Project Tokyo Workshop 2008 on 24 June 2008, Conference Room, AFRP Center, Tokyo University of Agriculture, Japan.

Antara. 2009. Beras Organik Tasik Tembus Pasar AS. Wednesday, 26 August 2009.

Evaluation Team, 2008. Evaluation Report: Rural Agro-enterprise Development in Indonesia (2004-2008). Agriculture Pragram, CRS Indonesia.

FUJIMOTO, Akimi. 2008. "Promoting Organic Farming in Japan", Symposium and Field Day of Organic Farming on 25 November 2008, Bogor Agricultural University, Indonesia.

JIMENEZ, Juan J. 2006. "Organic Agriculture and the Millennium Development Goals", IFOAM.

NIGGLI, U. 2007. "Holistic Approaches in Organic Farming Research and Development: A General Overview", http://www.fao.org/docrep/003/x6089e/x6089e07.htm available on 27 December 2008.

SULAEMAN, Ahmad. 2007. "Prospek Pasar dan Kiat Pemasaran Produk Pangan Organik", Seminar Nasional Pertanian Organik 4 Desember 2007, IPB, Bogor, Indonesia.

SUMNER, Jennifer. 2005. "Organic Farmers and Rural Development", A Research Report on the Links between Organic Farmers and Community Sustainability in Southwestern Ontario.

SURONO, J. Indro. 2007. "Country Case Study of Indonesia", Regional Conference on Organic Agriculture in Asia 12-15 December 2007, Bangkok, Thailand.